

REMARKS/ARGUMENTS

This is Applicant's response to the office action of September 10, 2004 wherein the Examiner, instead of filing a Reply Brief with a new ground of rejection, filed an Office Action and unilaterally declared prosecution reopened. Applicants maintained that under the new rules for Appeals, the Examiner should have filed a Reply Brief with the new ground of rejection and given Applicant an opportunity to go forward with the Appeal or request prosecution to be reopened.

Claims 1 and 4-13 have been rejected under 35 USC Section 103(a) as being unpatentable over Shamlou et al in view of Chen et al. The Examiner maintains that the lower limit (10 degrees) of the range of the angle of the wafer blade taught by Shamlou et al is "approximate" of that claimed. The Examiner relies on Chen et al for the generalized statement that the dimensions of the wafer blade may be adjusted. However, the Examiner's attention is directed to Chen et al at column 3, lines 3-13 which states "If the wafer diameter is increased, or decreased, the dimensions of the wafer support blade can be adjusted without exercise of the invention. The taper of the blade can be varied." Thus, Chen et al teaches that the dimensions of the wafer support may be change only in response to changes in the dimensions of the wafer, and does not suggest a solution to the problem of breaking end effector fingers which Applicants' invention addresses. Further, Chen et al fails to suggest how the support blade dimensions should be modified.

Furthermore, Chen et al actually teaches away from Applicant's claimed invention. The Examiner attention is respectfully directed to Figure 2 of Chen et al which shows

the thickness for various portion of the blade as 1.5 mm, 1.0 mm, and 0.65 mm. Thus, Chen et al teaches that the upper limit of the thickness of the blade should be 1.5 mm, which teaches way from Applicant's claimed range of 1.8-1.95 mm as set forth in claim 1. The rejection improperly ignore the range limitations of claim 1. No explanation is provided to explain why a person skilled in the art would deviate from the specific teaches of Chen et al. The Examiner's attention is respectfully directed to MPEP 2143.01 which states that "the mere fact that the references can be combined or modified does not render the resulting combination obvious unless the prior art also suggest the desirability of a combination. See In re Fine, 837 F.2d. 1071 (Fed.Cir.1988). No prima facie case of obviousness has been established with respect to claim 1.

The Shamlou et al Reference Teaches Away From Applicant's Invention

MPEP 2141.02 states:

PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)

Shamlou et al teaches that the leading edge of the of the end effector blade should be formed at an angle of 10-30 degree, and thus teaches away from Applicant's claim 1 that recites an angled surface formed at an angle ranging from 2-8 degrees. The rejection fails to address or explain why a person of ordinary skill in the art would ignore the teaching away affect of Shamlou et al, and therefore the rejection must be reversed.

The Rejection Fails to Identify Sufficient Motivation

MPEP 2143.01 states:

FACT THAT REFERENCES CAN BE COMBINED OR MODIFIED IS NOT SUFFICIENT TO ESTABLISH *PRIMA FACIE* OBVIOUSNESS

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The rejection fails to provide any motivation to go against the teaching of Shamlou et al. Nor does the rejection provide a rationale of why one would be motivated to reduce the angle of the tapered portion as opposed to increasing the angle above 30 degrees. The mere fact that the prior art could be modified does render the invention obvious.

With respect to claim 6, the rejection based on Shamlou et al and Chen et al fails to identify where the limitations “the tapered portion includes an angled surface formed at an angle ranging from 4-5 degrees with respect to the flat portion” can be found in the prior art or how the limitations would have been obvious therefrom. Again, the rejection completely ignores claim limitations. No explanation is provided as to why a person skilled in the art would be motivated to deviate from the prior art, only that such was possible.

With respect to claim 7, the rejection based on Shamlou et al and Chen et al fails to identify where the limitations “wherein the length of the tapered portion ranges from about 3-8 mm” can be found in the prior art or how the limitations would have been obvious therefrom. Again, the rejection completely ignores claim limitations. No explanation is provided as to why a

person skilled in the art would be motivated to deviate from the prior art, only that such was possible.

The Office Action of September 10, 2004 includes the following new ground of rejection. Claims 14 and 17 have been rejected under 35 USC Section 103(a) as being unpatentable over Oka et al in view of Shamlou et al. Oka et al discloses a semiconductor substrate conveyance arm 5 (semiconductor wafer blade) that includes a plate-like member and includes a thick-plate portion 5a at its rear end, a thin-plate portion 5b at its center, and a protrusion portion 5c formed on a free-end of the thin-plane portion 5b. (See column 7, lines 22-25). The protrusion portion 5c serves as a stop to prevent a wafer from sliding off of the conveyance arm 5 as shown in Figure 5B. Oka et al discloses that in order to allow a conveyance arm to be inserted into a wafer cassette without interfering with any of the substrates (wafers) in the cassette, it is desirable to detect the vertical positional range of each substrate. This is in addition to the information showing whether or not a substrate exists at each predetermined position because the prior art detection apparatus did not detect the vertical positional range for each substrate within the cassettes (see column 1 lines 36-44). To solve this problem, Oka et al uses a computer control program and sensing devices wherein if the clearance between two wafers is less than 1.0 mm, it is difficult to insert the substrate conveyance arm 5 without interfering with the wafers, so a substrate position detector 40 gives an alarm (alarm sound or alarm display) to inform the operator of the difficulties of insertion, and the driving control unit 89 stops the substrate conveyance arm.

The Examiner in the rejection maintains that Shamoul et al shows a wafer handling blade with a tapered end portion 114 and speculates that it would have been obvious to a person of ordinary skill in the art at the time of invention to modify the substrate conveyance arm 5 of Oka et al with the tapered end 114 of Shalou et al to prevent wafer damage. However, one of ordinary skill in the art would not have been motivated to modify Oka et al because Oka et al already included a computer control program in sensing elements to stop the movement of the substrate conveyance arm 5 if the clearance between wafers was not sufficient to allow the substrate conveyance arm to be inserted between adjacent wafers. Furthermore, one of ordinary skill in the art would not be motivated to modify the projection portion 5c of Oka et al because to do so one would lose the stop function provided by the projection portion 5c. The rejection provides no explanation as to why one skilled in the ordinary art would be motivated to modify Oka et al when Oka et al already included a system to prevent damage to the wafers. Furthermore, no explanation is provided in the rejection as to why one would eliminate the projection portion 5c and the function of providing a stop preventing the wafers from sliding off of the substrate conveyance arm 5 associated with 5c.

Furthermore, with respect to claim 14, the rejection based on Oka et al in view of Shamlou et al is fatally defect for failing to point out where any of the claim limitations are found in the prior art – not to mention failing to provide any motivation of how and why the prior art should be modified to arrive at Applicant's claim 14. For example, the rejection fails to identify where the limitations “and wherein the thickness of the extension between the substantially flat portion and the bottom surface is about 0.05-0.2 mm less than the opening between the adjacently positioned semiconductor wafers in the cassette housing” are found in the

prior art or why such limitations would be obvious in view of the prior art. Again, the rejection improperly ignores claim limitations and therefore no prima facie case of obviousness has been established. No explanation is provided as to why a person skilled in the art would be motivated to deviate from the prior art, only that such was possible. The rejection of claim 14 based on Shamlou et al and Chen et al should be withdrawn.

Claims 14-16 and 18 have been rejected under 35 USC Section 103(a) as being unpatentable over Oka et al in view of Chen et al. The Examiner maintains that it would have been obvious to a person of ordinary skill in the art to modify the protrusion 5c of Oka et al with a tapered end of a blade based on the disclosure of Chen et al. Again, Applicants maintain that one of ordinary skill in the art would not have been motivated to modify Oka et al because the reference already teaches a computer program and sensing devices to prevent damage to the wafers, and to modify the protrusion 5c would result in a loss of the advantage associated with a stop being provided for a wafer to prevent the wafer from sliding off of the substrate conveyance arm 5 of Oka et al. Chen et al, at most includes a general disclosure that the dimensions of a wafer blade may be adjusted. Claim 1 recites “the tapered portion includes an angled surface formed at an angle ranging from about 2-8 degrees with respect to the substantially flat portion.” Claim 6 recites “the tapered portion includes an angled surface formed at an angle ranging from about 4-6 degrees with respect to the substantially flat portion.” Claim 15 depends from Claim 14 and recites “the tapered portion includes an angled surface formed at an angle ranging from about 2-8 degrees with respect to the substantially flat portion.” Claim 16 depends from Claim 14 and recites “the tapered portion includes an angled surface formed at an angle ranging from about 4-5 degrees with respect to the substantially flat portion.” These limitations are completely

ignored in the rejection. The rejection provides no reasoning and identifies no motivation for a person of ordinary skill in the art to modify the prior art to arrive at the claimed invention. The examiner's attention is respectfully directed to MPEP 2143.01 which states that "the mere fact that the references can be combined or modified does not render the resulting combination obvious unless the prior art also suggest the desirability of a combination. See In re Fine, 837 F.2d. 1071 (Fed.Cir.1988). No prima facie case of obviousness has been established.

With respect to claim 14, the rejection based on Oka et al in view of Chen et al is fatally defect for failing to point out where any of the claim limitations are found in the prior art – not to mention failing to provide any motivation of how and why the prior art should be modified to arrive at Applicant's claim 14. For example, the rejection fails to identify where the limitations "and wherein the thickness of the extension between the substantially flat portion and the bottom surface is about 0.05-0.2 mm less than the opening between the adjacently positioned semiconductor wafers in the cassette housing" are found in the prior art or why such limitations would be obvious in view of the prior art. Again, the rejection improperly ignores claim limitations and therefore no prima facie case of obviousness has been established. No explanation is provides as to why a person skilled in the art would be motivated to deviate from the prior art, only that such was possible.

With respect to claim 15, the rejection based on Shamlou et al and Chen et al fails to identify where the limitations "the tapered portion includes an angled surface formed at an angle ranging from 2-8 degrees with respect to the substantially flat portion" can be found in the prior art or how the limitations would have been obvious therefrom. Again, the rejection

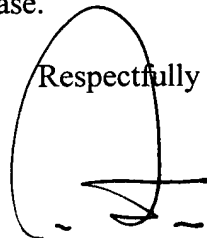
complete ignores claim limitations. No explanation is provides as to why a person skilled in the art would be motivated to deviate from the prior art, only that such was possible.

With respect to claim 16, the rejection based on Shamlou et al and Chen et al fails to identify where the limitations “the tapered portion includes an angled surface formed at an angle ranging from 4-5 degrees with respect to the substantially flat portion” can be found in the prior art or how the limitations would have been obvious therefrom. Again, the rejection complete ignores claim limitations. No explanation is provides as to why a person skilled in the art would be motivated to deviate from the prior art, only that such was possible.

With respect to claim 18, the rejection based on Shamlou et al and Chen et al fails to identify where the limitations “wherein the length of the tapered portion ranges from about 3-8 mm” can be found in the prior art or how the limitations would have been obvious therefrom. Again, the rejection complete ignores claim limitations. No explanation is provides as to why a person skilled in the art would be motivated to deviate from the prior art, only that such was possible.

In view of the above amendments and remarks, Applicants respectfully request reconsideration and allowance of the claims now in the case.

Respectfully submitted,

A handwritten signature in black ink, consisting of a large, loopy capital 'R' followed by a horizontal line and a small flourish.

Randy Tung
Reg. No. 31,311